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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,011	03/25/2002	Kenneth James Bunker	DP-309912	5289
22851	7590	04/29/2010	EXAMINER	
DELPHI TECHNOLOGIES, INC LEGAL STAFF - M/C 483-400-402 5725 DELPHI DRIVE PO BOX 5052 TROY, MI 48007				SICONOLFI, ROBERT
3657		ART UNIT		PAPER NUMBER
			MAIL DATE	
			04/29/2010	
			DELIVERY MODE	
			PAPER	

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* KENNETH JAMES BUNKER

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Appeal 2008-000350  
Application 10/089,011  
Technology Center 3600

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Decided: April 29, 2010

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Before JOHN C. KERINS, STEFAN STAICOVICI, and  
KEN B. BARRETT, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

## STATEMENT OF THE CASE

Kenneth James Bunker (Appellant) appeals under 35 U.S.C. § 134 (2006) from the Examiner's decision rejecting claims 14 and 17-20. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2006).

## THE INVENTION

Appellant's invention relates to a method for controlling a braking system of an automobile. Spec. 1, ll. 4-8.

Claim 14 is representative of the claimed invention and reads as follows:

14. A method of controlling a braking system of a road-going automobile, comprising:

providing the vehicle with front and back brakes in which the front brakes include a pair of rotatable wheel hubs, at least two spot-type brake discs mounted on each of the wheel hubs and supported for rotation with the wheel hubs and for axial sliding movement on the wheel hubs and each brake disc presenting opposite circumferentially continuous annular braking surfaces, at least three spot-type friction elements mounted on a stationary brake caliper associated with each wheel hub and interleaved with the associated brake discs and being circumferentially discontinuous so as to overly only an angular sector of the annular braking surfaces of the brake discs, and with at least two of the friction elements being axially slid able on its respective brake caliper for engaging and disengaging the braking surfaces of the brake discs;

providing a rotating electric actuator having a stator and a rotor with the electric actuator operative to move the friction elements into braking engagement with the brake discs; and

controlling the attitude and movement of the brake discs with respect to the wheel hub and controlling the attitude and

movement of the friction elements with respect to the caliper to maintain the brake discs and friction elements in parallel alignment during sliding movement into and out of braking engagement with one another.

### THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Taig	US 4,804,073	Feb. 14, 1989
Bunker	WO 98/26191	Jun. 18, 1998

Appellant seeks review of the Examiner's rejection of claims 14 and 17-20 under 35 U.S.C. § 103(a) as unpatentable over Bunker and Taig.

### SUMMARY OF DECISION

We AFFIRM-IN-PART.

### OPINION

The Examiner found that Bunker discloses all the features of independent claim 14 with the exception of an electric actuator. Ans. 3. The Examiner further found that Taig discloses a disc brake system including a hydraulic mechanism and an electric actuator. *Id.* The Examiner concluded that it would have been obvious to a person of ordinary skill in the art to use the electric actuator and hydraulic backup of Taig in the system of Bunker "in order to improve performance due to elimination of *pressure delay* while still maintaining safety even in the event of an electrical failure." *Id.* Emphasis added.

Appellant argues that the Examiner's reason to combine the teachings of Bunker and Taig "is not based on an objectively accurate assertion about

braking systems.” App. Br. 4. More specifically, Appellant argues that the Examiner has not provided any factual basis to show that a hydraulic brake system suffers from “pressure delay” relative to an electrical braking system. *Id.* See also Reply Br. 1-2. In response, the Examiner takes the position that because an “electrical signal used in a motor setup travels at the speed of light,” whereas a “pressure wave in a hydraulic system travels at a speed several orders of magnitude slower, [a hydraulic system] is not as fast as an electrical system.” Ans. 3.

Although we appreciate the Examiner’s position that an electrical signal travels faster than a hydraulic wave, nonetheless, we find that a person of ordinary skill in the art would have readily recognized that the response time of a hydraulic or electrical brake system is not solely dependent on the speed of the hydraulic or electrical signal, respectively. Specifically, the response time of a braking system also depends on the response time of the system’s components. For example, as Appellant has pointed out, in the electrical braking system of Taig, signal sampling and processing and rotational inertia of the various gears, are factors that affect the overall response time of the braking system. See Reply Br. 2. Without taking such factors into consideration, we find that it is not clear that a hydraulic braking system would have been perceived by a person of ordinary skill in the art to suffer from *pressure delay* relative to an electrical braking system. Furthermore, Taig specifically teaches a disc brake that:

“ . . . may be operated either solely by means of an electrically or hydraulically operated motor or be operated hydraulically for a service brake application and operated by a motor for a parking brake application.”

Taig, col. 1, ll. 18-22.

As such, we find that a person of ordinary skill in the art would have inferred from the disclosure of Taig that because the brake system may be operated either solely hydraulically or solely electrically, the hydraulic brake system does not necessarily suffer from “pressure delay” relative to an electrical braking system, as the Examiner contends.

For the above stated reasons, the Examiner has not established, on the record before us, that a hydraulic braking system would have been perceived by a person of ordinary skill in the art to suffer from *pressure delay* relative to an electrical braking system.

In conclusion, the modification proposed by the Examiner of modifying the system of Bunker with the electric actuator and hydraulic backup of Taig “in order to improve performance due to elimination of *pressure delay*” would not have been obvious to a person of ordinary skill in the art. Emphasis added. Accordingly, the rejection of independent claim 14 and its dependent claims 17-19 cannot be sustained. *See In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988) (If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim dependent therefrom is nonobvious).

Finally, with respect to claim 20, we note that the Notice of Appeal filed Aug. 3, 2006, states that the final rejection of claims 14 and 17-20 is being appealed. However, in the Appeal Brief filed Dec. 18, 2006, Appellant specifically indicates that only the final rejection of claims 14 and 17-19 is being appealed (“[c]laims 14 and 17-20 stand rejected” and “[c]laims 14 and 17-19 are being appealed,” Appeal Brief 3). Consistent with the holding in BPAI precedential opinion *Ex Parte Ghuman*, 88 USPQ2d 1478, 1480 (BPAI 2008), Appellant may not reserve arguments for

Appeal 2008-000350  
Application 10/089,011

some later time. Arguments Appellant could have made but chose not to make in the Briefs are waived. See 37 C.F.R. § 41.37(c)(1)(vii)(2009).

Accordingly, we summarily affirm the Examiner's rejection of claim 20 under 35 U.S.C. § 103(a) as unpatentable over Bunker and Taig.

## DECISION

The Examiner's decision is reversed as to claims 14 and 17-19 and affirmed as to claim 20.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

## AFFIRMED-IN-PART

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